to **135** as the dotted light source are mounted, for example, in an upright posture on the substrate **130** of a prescribed size to which is mounted an LED illuminating drive circuit or the like. Pores **130***a* from which the illumination unit **6** of the LEDs **131** to **135** is exposed are provided at prescribed positions on the substrate **130**.

[**0085**] When providing a description with LED **131** as the example, the pore **130***a* is formed in a conical shape (cone shape) broadening toward the front of the of the substrate **130**, and the light emitted from the respective LEDs may be irradiated at a broad angle. A stud nut **130***c* having a prescribed height is welded at two places at the left and right sides of the thin metal plate **130***b*, or established by pressurization (to the pore not shown formed on the thin metal plate **130***c*), and the mounting plate **130***d* and the thin metal plate **130***b* are integrally formed by mounting a mounting plate **130***d* on these nuts **130***c* and tightening this with a bolt **130***e* from the opposite face. The thin metal plate **130***b* to the bolt **130***e* form the LED supporting unit. A pore **130***f* is further formed at both end positions of the thin metal plate **130***b*, and, although not shown, a triangular screw penetrates the cone shaped pore formed on the substrate **130** in order to integrally form the substrate **130** and muzzle **16** by tightening the bolt via the LED supporting unit.

[**0086**] Next, explained is the structure for protecting the rotation and the like of the mirror **43**. **FIG. 10** is a typical cross section showing the acrylic plate **142** established for protecting the projection of the image form the projector **31**, and **FIG. 11** is a diagram showing the structure of the acrylic plate retention member **141** (**FIG. 11A**) and the acrylic plate **142** (**FIG. 11B**).

[**0087**] The acrylic plate **142** (**FIG. 11B**) established so as to cover the mirror **43**, projector **31** and the like in a state of where the end thereof is passing through the acrylic plate guide groove **143** (**FIG. 11A**), as shown in **FIG. 10**, transmits the images from the projector **31**, and protects the inside which houses the likes of the mirror **43** and projector **31** from outside sources. Further, when the real image is projected on the upper part of the screen **121**, an inclination of roughly 10° is provided from the horizontal direction such that the virtual image is connected to the outside of the screen **121** with the light reflected from the likes of the acrylic plate **143** and mirror **43**.

[**0088**] The control of the present game machine structured as above is now explained with reference to FIGS. **12** onward. **FIG. 12** is a block diagram showing the hardware structure of the control unit of the present game machine, and **FIG. 13** is a flowchart showing the procedure of the shooting game processing (shooting video game program) executed with the game control unit (CPU) **103**.

[**0089**] As shown in **FIG. 12**, connected to the (game control unit **103** of the) main body control unit **100** set within the base **110** (**FIG. 6**) are the aforementioned CCD camera **6**; trigger switches **11**, **21**; pump trigger switches **12**, **22**; player detection sensors **51** to **54**; start button **36**; projector **31**; stepping motor **41**; speakers **32** to **35**; coin switch **37** for detecting the insertion of the coin from the coin insertion slot **38**; and position sensor **42** for determining the rotational reference position of the mirror with the semicircular plate mounted on the mirror axis (upon turning on the power), and the display position of the projected image **124** on the screen **121** (**FIG. 7**) is continuously designated by the game control unit **103** designating the rotation angle from the rotational reference position.

[**0090**] Provided to the main body control unit **100** are a ROM **105** storing the program, image data and sound data for the shooting video game processing described later; a RAM **106** for temporarily storing the program read from the ROM **105** and data used in the program; a game control unit **103** for controlling the overall progress of the game based on the program loaded on the RAM **106**; a drawing control unit (image drawing processor) **101** for writing image data corresponding to the projected image of the projector **31** in the frame buffer **102** while performing processing unique to the image such as polygon drawing and texture mapping in accordance with the coordinates of the object having a 3D shape within the game space; and a sound control unit (sound control processor) **104** comprising an ADPCM sound source for reproducing sounds from the sound data.

[**0091**] With the shooting video game processing to be executed at the game control unit **103**, as shown in **FIG. 13**, if the coin insertion is not detected with the coin switch **37** (NO at ST**2**), demo image data is read and a demo screen is displayed (ST**1**).

[**0092**] When the insertion of the coin is detected (YES at ST**2**), the start screen is displayed (ST**3**), (and when the pressing of the start button **36** is further detected) the game start processing is executed (ST**5**) and the game is started after other game data is read (ST**4**) which characterizes the image data and sound data differing per stage, and the attack or movement of the enemy character (foregoing dinosaur or other shooting targets) and the movement of the player.

[**0093**] With the present game machine, similar to conventional hand-to-hand combat game machines, a virtual life of the player is set and reduced in accordance with the time limit of the game and the attack by the enemy character, and the game is ended when the time is up during the game progress (YES at ST**6**) or when the life runs out (NO at ST**7**), and a screen indicated game over is displayed (ST**13**). If time still remains (NO at ST**6**) and the life still remains (YES at ST**7**), the game is continued at the game processing main body (ST**8**, to be described in detail later with reference to **FIG. 15** and the like).

[**0094**] When a stage is cleared (YES at ST**9**) by defeating the enormous dinosaur shown in FIGS. **2** to **4**, and the cleared stage is not the final stage (NO at ST**10**), processing from ST**4** is repeated for the new stage.

[**0095**] When the cleared stage is the final stage (YES at ST**10**), the markers **13**, **23** are turned off thereafter (ST**11**), the ending screen and game over screen are displayed (ST**12**, ST**13**), and the routine returns to the processing of ST**1**.

[**0096**] **FIG. 14** is a block diagram showing the structure of the principal parts of the game processing unit **400** (part of the shooting video game program) for performing the processing with the game processing main body at ST **8** of **FIG. 13**, and **FIG. 15** is a flowchart showing the detailed procedure of the processing with the game processing main body at ST**8**. **FIG. 16** and **FIG. 17** are diagrams for explaining the detection of the position of the player **300** on the play area PE with the player detection sensors **51** to **54** (in a one player game with only 1P player).